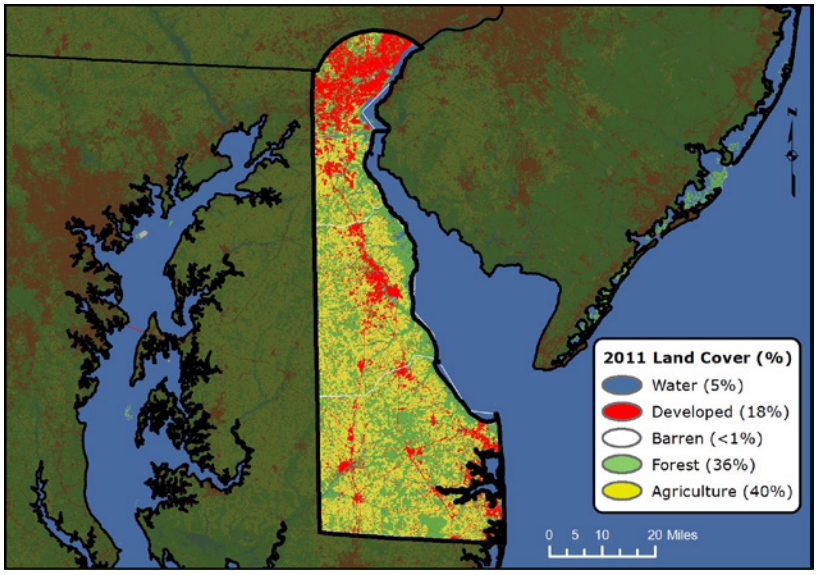
USDA United States Department of Agriculture

2016 Forest Health highlights

DELAWARE

Forest Resource Summary

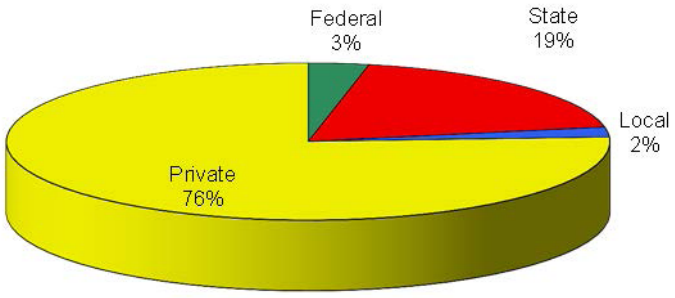
Delaware's forests presently cover approximately 371,000 acres, roughly one-third of the land area in the State. Delaware has experienced a rapid conversion of forests and agricultural lands to residential and other urban uses since the 1980s.



Weather Conditions

Delaware's 2015/2016 winter was relatively mild, with only two nights reaching lows around 10° Fahrenheit (January 25 and February 14). Spring growth started early with a warmer than usual March. Late frosts on April 5, 6, and 10 lead to some leaf damage. Alternating warm and cool periods continued with a cool, rainy early May, then a warming to summer-like temperatures by late May. Steady rains made for a good growing season until a small drought began about August 22 and lasted through September 19.

Forest Land Ownership in Delaware, 2012



Forest Service
Northeastern Area
State and Private Forestry

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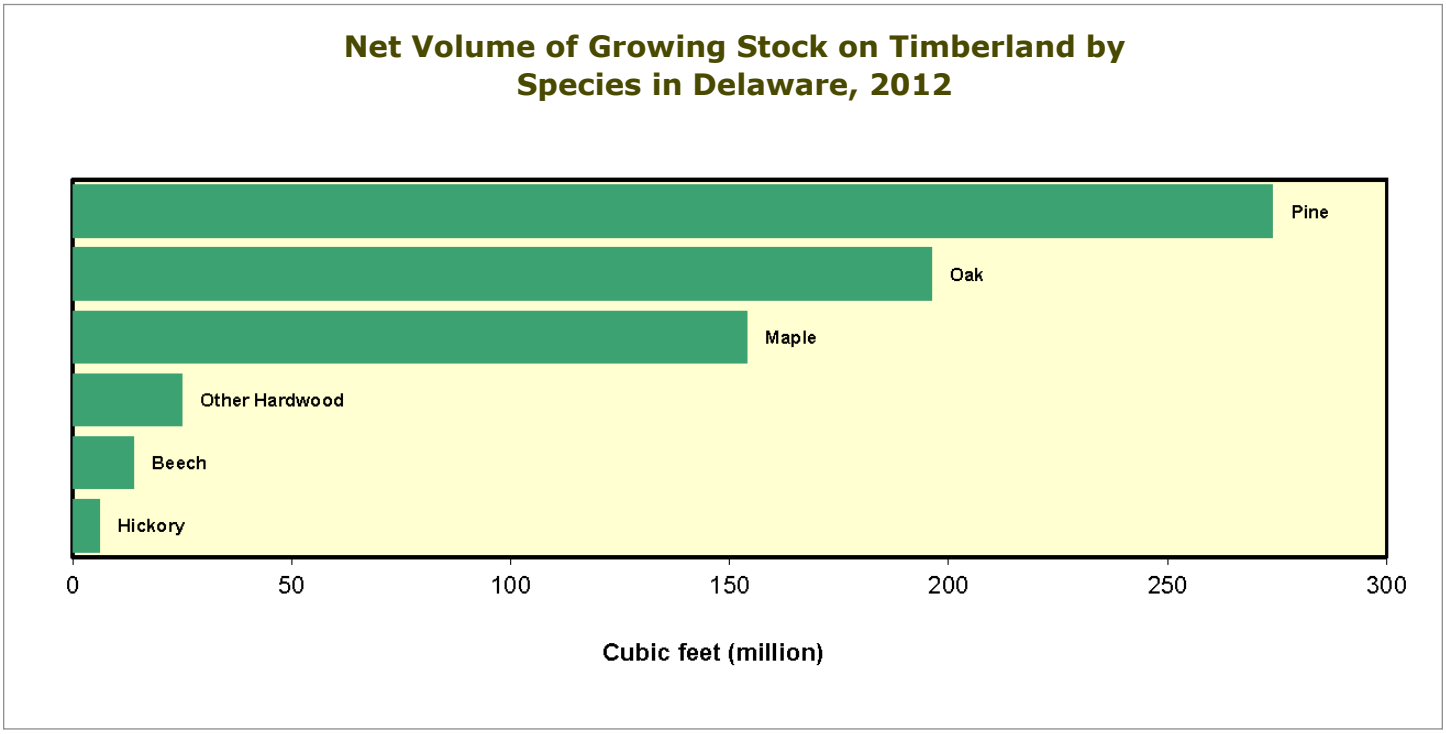
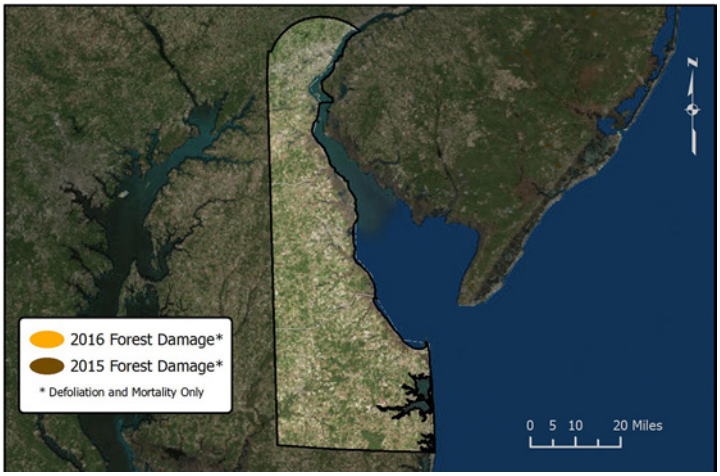
Delaware Forest Service

January 2017



Forest Health Surveys

Delaware forest health was surveyed via airplane and ground checks in 2016. About 80 percent of Delaware was flown on June 13 and 14. Forest health issues noted from the flight this year included the following: southern pine beetle mortality and discoloration in loblolly pine along tidal marshes and rivers, man-made flood damage from water-control structures on old tax ditches, a small pesticide overspray, and 3 acres of heavy gypsy moth defoliation in mature white oak.



Forest health survey observations in Delaware in 2015 and 2016.

Forest Pest Issues

Gypsy Moth

Gypsy moth egg masses were common, especially in pine stands, along the southern edge of Sussex County this spring. Few larvae were seen by late spring. The fungal parasite *Entomophaga maimaiga* is suspected to have caused some die-off of the larvae, although this was not confirmed. A population of gypsy moth defoliated 3 acres of mature white oaks at the intersection of Highways 896 and 40 in west-central New Castle County.

A female gypsy moth lays eggs in a mass in New Castle County, Delaware, in 2016. (Photo: Hannah Small, DE Forest Service Forest Health Intern)

Emerald Ash Borer

Delaware joined the Federal emerald ash borer (EAB) quarantine area this August with a single find of an adult beetle on a purple trap in northwestern New Castle County. The search is on for infested ash trees, but they have not been found to date. The Delaware Forest Service continued *Cerceris* wasp biosurveillance efforts this summer, although EAB was not discovered among the native buprestid prey items.

Asian Longhorned Beetle

Asian longhorned beetle (ALB) is a serious threat to a variety of hardwood species, especially the rural and urban maples throughout Delaware. Trapping begun in 2012 was continued in 2016. No ALB was detected in 2016. Shantung maple (*Acer truncatum*) seedlings planted in six New Castle County parks became established and will serve as sentinel trees for ALB in future years.

Sirex Woodwasp (*Sirex noctilio*)

Sirex noctilio presents a threat to loblolly pine, the mainstay of the forest products industry in southern Delaware. In late August 2016, 18 Lindgren traps baited with a Sirex blend were hung at nine sites throughout the State. Sirex has yet to be detected in Delaware.

Other Insects

With the finds of walnut twig beetle (WTB) in recent years in nearby Pennsylvania and Maryland, an increased number of WTB traps were set up in northwest New Castle County. Though the traps will be monitored through the end of October, no WTB was discovered as of early October. A large amount of jumping oak leaf gall was observed again in the second year of the white oak permanent plot study at Blackbird State Forest in southwest New Castle County. Japanese maple scale (*Lopholeucaspis japonica*) was noted heavily attacking several landscape trees when homeowners called the Delaware Forest Service for assistance.

Disease Concerns

Bacterial Leaf Scorch

Bacterial leaf scorch (BLS) symptoms appeared on many trees in September after the drought began. BLS symptoms were very common in northern red oak, pin oak, and some other red oaks in New Castle County.

Other Diseases

Anthracnose and fungal leaf spots on many ornamentals and woodland hardwood trees were at high levels this spring and summer due to the cool, wet spring. Many sycamores in Sussex County suffered complete defoliation, probably from a combination of the late frost in April and heavy anthracnose infections. Swiss needlecast (*Phaeocryptopus gaeumannii*) was reported by several homeowners and Christmas tree farms on Douglas firs.

Forest Health Monitoring

Bacterial Leaf Scorch

Red oaks at three permanent plots on State Forest lands showed lower percentage canopy scorch symptoms this early September than most years. One 18-inch d.b.h. scarlet oak that had shown 50 percent dieback in 2015 was found dead this September. Three other pole-sized red oaks also died this year. Approximately 180 red oaks are studied each year on all three plots.

White Oak Decline Study

In the second year of data collection for a white oak study at Blackbird State Forest, crews noted d.b.h., crown dieback, and any adverse health signs or symptoms for marked trees. A total of 149 oaks (primarily white) are marked at 10 plots on two tracts at Blackbird State Forest. Dieback percentage was estimated as very similar to the baseline year of 2015. Jumping oak leaf gall was noted very often again this year. Leaf anthracnose was also very common, especially on red oaks. No new dominant or codominant oaks suffered mortality, though six suppressed or intermediate trees were lost.

Southern Pine Beetle

This spring, the southern regional forester discovered 25 acres of southern pine beetle (SPB) mortality on overmature loblolly pine bordering a salt marsh. Ground observations suggested that this attack swept through the stand some time in 2015. Other pine stands with needle discoloration along the salt marshes and tidal rivers were observed during the aerial flight and several were ground checked. Scattered SPB attacks on loblolly and other hard yellow pines were observed with no additional successful population buildups noted. Most of the discoloration was red needles that appeared to be dehydration from salt spray or brackish water flooding.

Discoloration of loblolly pines along salt marshes. Sussex County, Delaware, June 2016. (Photo: William Seybold, DE Forest Service)

Delaware participated in the Southwide SPB Pheromone Study again this year. Trapping started April 20 and ran until May 25. Nine adult SPB were trapped in the four traps this year, very similar to the 11 SPB trapped in 2015; however, this number was up again from the 0 SPB trapped in 2014.

Southern pine beetle mortality in loblolly pine. Sussex County, Delaware, May 2016. (Photo: William Seybold, DE Forest Service)

References

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Net Volume of Growing Stock on Timberland by Species:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service update of the 2010 RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 23 & 24. http://www.fs.fed.us/sites/default/files/media/types/publication/field_pdf/GTR-WO-91.pdf. (1 March 2016).

Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.

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